

REMARKS/ARGUMENTS

Reconsideration and allowance of this application are respectfully requested.

Currently, claims 1-22 are pending in this application.

Allowable Subject Matter:

Claims 5-11 have been indicated as being allowable.

Claim 3 was objected to as being dependent upon a rejected base claim. Claim 3 has been maintained herein.

Rejections Under 35 U.S.C. §102:

Claims 1-2 and 4 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by Bryant et al (U.S. ‘285, hereinafter “Bryant”). Applicant respectfully traverses this rejection.

For a reference to anticipate a claim, each element must be found, either expressly or under principles of inherency, in the reference. Each element of the claimed invention is not found in Bryant. For example, Bryant fails to disclose or even suggest “a map for storing misfire determination values as a basis for determining engine misfiring, the map adopting a plurality of crankshaft rotation periods as parameters such that each misfire determination value is associated with one of the plurality of crankshaft rotation periods,” as required by independent claim 1 and claims 2 and 4 which depend therefrom.

Conventional misfire determination systems such as that disclosed by Bryant utilize maps that adopt rotational speed as a parameter for determining engine misfire. The threshold value for determining speed fluctuation quantity in such a system is inversely proportional to the rotational speed. This inverse proportional relationship

requires a large number of data points to ensure accurate determination of the engine misfire.

In contrast, the map required by claim 1 adopts a rotational period as the parameter. This feature is supported by, for example, Fig. 4 of the originally-filed application. That is, Fig. 4 illustrates a misfire determination value and a rotational period having a linear relationship. By using interpolation, a detector that can detect a misfire with high precision without requiring a large number of data points. Bryant fails to appreciate this benefit resulting from using a rotational period as a parameter.

Page 3, lines 6-7 of the Office Action makes reference to col. 3, lines 31-53; col. 4, lines 11-23 and col. 6, line 35 to col. 7, line 38 of Bryant. Applicant submits that none of these specifically identified portions of Bryant teaches a map that adopts crankshaft rotational period as a parameter for determining misfire determination values. For example, col. 3, lines 31-53 merely provide a brief description of Figs. 5-12 of Bryant. Col. 4, lines 11-23 merely disclose measuring velocity and corrected acceleration values as a crankshaft rotates. While Bryant discloses a map for use in determining the misfire of an engine based on a speed and an acceleration of a crankshaft, Bryant fails to disclose a map adopting crankshaft rotational periods as parameters.

Accordingly, Applicant respectfully submits that claims 1-2 and 4 are not anticipated by Bryant and therefore respectfully requests that the rejection of these claims under 35 U.S.C. §102 be withdrawn.

New Claims:

New method claims 12-22 have been added to provide additional protection for the invention. New independent claim 12 requires, *inter alia*, “storing misfire

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determination values in a map as a basis for determining engine misfiring, the map adopting a plurality of crankshaft rotation periods as parameters....” New independent claim 16 requires, *inter alia*, “determining from the determined variation values and the detected rotational fluctuation value whether the engine is misfiring.” Applicant submits that new claims 12-22 are allowable.

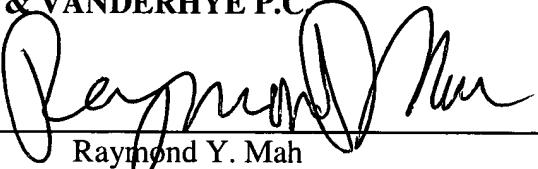
Conclusion:

Applicant believes that this entire application is in condition for allowance and respectfully requests a notice to this effect. If the Examiner has any questions or believes that an interview would further prosecution of this application, the Examiner is invited to telephone the undersigned.

Respectfully submitted,

NIXON & VANDERHYE P.C.

By: _____


Raymond Y. Mah

Reg. No. 41,426

RYM:sl
901 North Glebe Road, 11th Floor
Arlington, VA 22203-1808
Telephone: (703) 816-4044
Facsimile: (703) 816-4100